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| 10/693,750 | 10/24/2003 | Shankar Pal | MSFT-2160/304750.1 | 2447 |

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| EXAMINER |
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CHÉN, TE Y

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| ART UNIT | PAPER NUMBER |
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2161

DATE MAILED: 06/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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|------------------------------|--------------------------------------|-----------------------------------|--|
| Office Action Summary | Application No. 10/693,750 | Applicant(s) PAL ET AL. | |
| | Examiner Susan Y. Chen | Art Unit 2161 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) 10-18 and 31-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 19-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

This office action is responsive to the Election of Restriction filed on May 23, 2006. Applicant has elected group I (claims 1-9 and 19-30) without traverse for continue prosecution. Claims 10-18 and 31-33 have been withdrawn from prosecution. Applicant is reminded to cancel all non-elected claims.

Priority

Priority Date: Filing date -- Oct. 24, 2003.

Drawings

This application has been filed with informal drawings which are acceptable for examination purposes only. The drawings are hard to read, formal drawings will be required when the application is allowed.

Specification

The disclosure is objected to because of the following informalities: The use of the trademark "MICROSOFT®s.NET" has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the used of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-9 and 19-30, are rejected under 35 U.S.C. 101, because the claimed invention is directed to non-statutory subject matter.

In the present case, the method claims (Claims: 1-9 and 28-30) merely storing, retrieving and querying XML data, it seems do not producing a concrete, useful and tangible result to form the basis of statutory subject matter under 35 U.S.C. 101. In addition, the claimed program medium including transmission medium such as a carrier wave upon which the signals are modulated, acoustic, RF, infrared and other wireless media [e.g., instant specification: section 0022], therefore, it renders the claims (Claims: 19-24) to be not tangible. Furthermore, the system claims (Claims: 25-27) also fail to produce a concrete, useful and tangible result even if in combination with a physical device.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

Art Unit: 2161

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 28-30, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 28, it is not understood what is it meant by "results of the query are expressed as at least one of the group of one or more entries of the database and one or more entries of the XML data". For the purpose of examination, the examiner interprets the claimed subject matters as "results of the query are expressed in database and XML attributes".

As to claim 29-30, these claims have the same defects as their base claim, hence are rejected for the same reason.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 5-9 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,584,459 issued to Chang et al. (hereinafter referred as Chang).

Claim 1:

Chang discloses the claimed method of storing and retrieving XML data, the method [e.g., Abstract, Col. 1, Field of the Invention; col. 3, lines 47-60; Fig(s). 2 & 4 and associated texts] comprising:

creating a primary table structure [e.g., the steps: S2, S3 at Fig. 4 and associated texts; Creation of an XML table section starting at col. 13 at seq.];

creating a primary XML index relating to the primary table structure [e.g., steps: S3-S7, Fig. 4 and associated texts; Enablement of an XML Index section starting at col. 14 at seq.];

populating the primary table and the primary XML index [e.g., steps: S8-S9, Fig. 4 and associated texts; Insertion of Data into the XML column section starting at col. 20 at seq.]; and

querying on the primary table utilizing the XML index to retrieve the XML data [e.g., step: S10, Fig. 4 and associated texts; Querying of an XML Table section starting at col. 21 at seq.].

Claim 2:

Art Unit: 2161

Except the method of claim 1, Chang further discloses the creating a primary XML index creates a node table [e.g., col. 15, lines 50-67 & Fig. 10].

Claim 3:

Except the method of claim 2, Chang further discloses that the node table comprises a B⁺ tree structure [e.g., col. 15, line 64-66].

Claim 5:

Except the method of claim 1, Chang further disclose that the creating a primary table structure comprises creating a structure for XML data and non-XML data [e.g., the create adt DB2XML (...) statements at col. 9, lines 1-10].

Claim 6:

Except the method of claim 5, Change further discloses that the querying retrieves XML and non-XML data [e.g., col. 9, lines 11- col. 10, line 18].

Claim 7:

Except the method of claim 1, Change further discloses that the method is performed by a database engine [e.g., the unit 100, Fig. 1 and associated texts].

Claim 8:

Except the method of claim 1, Change further discloses the following:

Art Unit: 2161

creating a secondary XML index relating to the primary table structure and the primary XML index [e.g., the use of create index ... statements at col. 20, lines 1- 32, Fig(s) 5-6];

populating the secondary XML index [e.g., col. 19, line 50 – col. 21, line 15] ; and querying on the primary table wherein the query utilizes the primary XML index and the secondary XML index to retrieve the XML data [e.g., col. 20, lines 33-52].

Claim 9:

Except the method of claim 1, Change further discloses that the querying further comprises utilizing multiple path expressions in the retrieval of the XML data [e.g., col. 15, lines 45 - col. 16, line 6].

Claim 19:

This claim incorporates substantially similar subject matter as claim 1 in form of a machine-readable medium, hence is rejected along the same rational.

Claim 20:

This claim incorporates substantially similar subject matter as claim 2 in form of a machine-readable medium, hence is rejected along the same rational.

Claim 21:

Art Unit: 2161

This claim incorporates substantially similar subject matter as claim 3 in form of a machine-readable medium, hence is rejected along the same rational.

Claim 23:

This claim incorporates substantially similar subject matter as claim 5 in form of a machine-readable medium, hence is rejected along the same rational.

Claim 24:

This claim incorporates substantially similar subject matter as claim 6 in form of a machine-readable medium, hence is rejected along the same rational.

Claim 25:

Chang discloses the claimed system for performing queries on XML data, comprising:

an input device for receiving a query [e.g., the GUI tool, Fig. 2, the unit 706, Fig. 7];

a processor for executing the query [e.g., the Search Engine 180, Fig. 2, the unit 702, Fig. 7];

at least one organization of XML data [e.g., the XViewer, XSearcher, XML Parser, etc. Fig. 2, the units: 704, 708, Fig. 7];

Art Unit: 2161

a software structure providing an XML index of the XML data wherein nodes of the XML index are organized as a B+ tree [e.g., col. 7, lines 26 – col. 8, line 42, col. 15, lines 45-66, Fig(s) 2, 4, 6, 7, 8, 10]; and

an application program which allows the processor to utilize the XML index as a tool for performing the query [e.g., the unit 120, Fig. 2].

Claim 26:

Except the method of claim 25, Change further discloses that the application program is database management system software and the processor executes the application program [col. 7, lines 27-52].

Claim 27:

Except the method of claim 25, Change further discloses that the results of the query are provided for examination [e.g., the units: 122, 126, Fig. 2, the unit 718, Fig. 7].

Claim 28:

Chang discloses the claimed method of querying a database [e.g., the DB2® database, Fig. 1], comprising:

generating an XML index referencing XML values contained in the at least one column of XML data, wherein the XML index is generated as a node table [e.g., col. 15, Structure Indexed for the XML Extender section];

utilizing the XML index to perform a query [e.g., col. 18, lines 55-67];

Art Unit: 2161

accessing entries of the database related to the at least one XML value, wherein results of the query are expressed as at least one of the group of one or more entries of the database and one or more entries of the XML data [e.g., col. 19, lines 1-67].

Claim 29:

Except the method of claim 28, Change further discloses that the database is a SQL database [e.g., col. 19, lines 60-63].

Claim 30:

Except the method of claim 28, Change further discloses that the generating an XML index comprises utilizing at least one data definition language statement [e.g., col. 19, lines 33-44].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4 and 22, are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,584,459 issued to Chang et al. (hereinafter referred as Chang), in view of U.S. Patent No. 6,915,303 issued to Kauffman.

Art Unit: 2161

Claim 4:

Except the method of claim 2, Chang further discloses that populating the primary XML index comprises populating the node table by shredding XML values stored in an XML column of the primary table [e.g., the DTD Bounded Indexing Mechanism at col. 14, lines 38-49].

Chang did not expressly disclose that the node table stored as binary large object.

However, Kauffman discloses the claimed feature [e.g., col. 1, Field of Invention section, lines 23-30; lines 57-65; col. 4, lines 48 – col. 5, lines 21].

Chang and Kauffman are both in the same field of endeavor to shred XML values for storing in the hierarchical node tables via XML parsing and transformation, therefore, it would have been obvious for an ordinary skilled person in the art at the time the invention was made to store the node table as the well-known binary large object as taught by Kauffman into Chang's invention. Because by doing so, the combined method would be upgraded for not only be able to process the Character Based Large Object (CLOB) but also the multi-media Binary Large Object (BLOB).

Claim 22:

This claim incorporates substantially similar subject matter as claim 4 in form of a machine-readable medium, hence is rejected along the same rational.

Conclusion

To expedite the process of re-examination, the examiner requests that all future correspondences in regard to overcoming prior art rejections or other issues (e.g., 35 U.S.C. 1112) set forth by the Examiner prior to the office action, that applicant should provide and link to the most specific page and line numbers of the disclosure where best support is found (see 35 U.S.C. 132).

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

1) Gawlick et al. (U.S. Patent No. 6,377,953) which discloses a database having an integrated transformation engine using pickling and unpickling of data.

2) Cheng et al. (U.S. Patent No. 6,366,934) which discloses a relational database extender for querying structured documents.

Points of Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan Y. Chen whose telephone number is 571-272-4016. The examiner can normally be reached on Monday - Friday from 7:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeff Gaffin can be reached on 571-272-4146. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2161

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Susan Y Chen
Examiner
Art Unit 2161

June 9, 2006

